

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1-12 (canceled)

Claim 13 (currently amended): A curable coating composition for electrical conductors, comprising:

- (A) 1-60 wt.% of at least one reactive particle, said reactive particles having an average radius ranging from ~~1nm to 300nm~~ 1 nm to 300 nm, wherein said reactive particles are based on an element-oxygen network, and wherein the elements are selected from the group consisting of silicon, zinc, aluminum, tin, boron, germanium, gallium, lead, the transition metals, and lanthanides and actinides;
- (B) 0-90 wt.% of at least one conventional binder having at least one functional group capable of chemically reacting with the reactive particle of component (A); and
- (C) 0-95 wt.% of at least one conventional additional component selected from the group consisting of additive, solvent, pigment and/or and filler; wherein the total wt.% of (A) + (B) + (C) equals 100 wt.%;

wherein the element-oxygen network of said reactive particles has at least one reactive function R₁ and optionally at least one non-reactive and/or at least one partially reactive functions R₂ and R₃ bound by way of an oxygen of the element oxygen-network to the surface of said reactive particles, the reactive function R₁ being contained in an amount up to 98 wt.% of said reactive particles and the non-reactive and/or partially reactive functions R₂ and R₃ being contained in an amount from 0-97 wt.% of said reactive particles;

wherein R₁ comprises radicals selected from the group consisting of metal acid esters, NCO, urethane groups, epoxide groups, epoxy, carboxylic acid anhydride,

C=C double bond systems, OH, alcohols bound by way of oxygen, alcohols bound by way of esters, alcohols bound by way of ethers, chelating agents, COOH, NH₂, NHR₄, and reactive resin components;

wherein R₂ comprises radicals selected from the group consisting of aromatic compounds, aliphatic compounds, fatty acid derivatives, esters, and ethers;

wherein R₃ comprises resin radicals;

wherein R₄ comprises radicals selected from the group consisting of acrylate, phenol, melamine, polyurethane, polyester, polyester imide, polysulfide, epoxide, polyamide, polyvinyl formal resins, aromatic compounds, aliphatic compounds, esters, ethers, alcoholates, fats, and chelating agents;

wherein said reactive particles of component A require the presence of the at least one conventional binder of component B when the reactive function R₁ comprises radicals selected from the group consisting of metal acid esters, NCO, urethane groups, epoxide groups, epoxy, carboxylic acid anhydride, C=C double bond systems, OH, alcohols bound by way of oxygen, alcohols bound by way of esters, alcohols bound by way of ethers, chelating agents, COOH, NH₂, and NHR₄;

~~whereby said coating composition is an electrically insulative coating composition. whereby, after application and curing of the curable coating composition, the element-oxygen network becomes an inorganic-organic-oxygen network providing a cured coating with high partial discharge resistance.~~

Claim 14 (currently amended): A curable coating composition according to claim 13, wherein the reactive function R₁ comprises radicals selected from the group consisting of OTi(OR₄)₃, OZr(OR₄)₃, acetyl acetonate, 2-hydroxyethanolate, and diethylene glycolate.

Claim 15 (currently amended): A curable coating composition according to claim 13, wherein R₃ comprises radicals selected from the group consisting of polyester imides and THEIC polyester imides.

Claim 16 (currently amended): A curable coating composition according to claim 13, wherein R₄ comprises radicals selected from the group consisting of acrylate resins, aminotriethanolate, acetyl acetonate, polyurethane resins, and butyl diglycolate.

Claim 17 (currently amended): A curable coating composition according to claim 13, wherein the reactive particles of component (A) have a network of elements selected from the group consisting of titanium, aluminum, silicon, and zirconium bound to the oxygen of the element-oxygen network of said reactive particles.

Claim 18 (currently amended): A curable coating composition according to claim 13, wherein the reactive particles of component (A) have an average radius of 2-80 nm.

Claim 19 (currently amended): A curable coating composition according to claim 13, further comprising monomeric or polymeric element-organic compounds selected from the group consisting of orthotitanic acid ester, orthozirconic acid ester, titanium tetralactate, hafnium tetrabutoxide, tetraethyl silicate and silicone resins.

Claim 20 (previously presented): A process for coating a metal conductor comprising the steps of applying the coating composition according to claim 13 and curing said coating composition at an elevated temperature.

Claim 21 (previously presented): A process according to claim 20, wherein the metal conductor is an electrically conductive wire.

Claim 22 (previously presented): A process according to claim 21, wherein the electrically conductive wire is pre-coated.

Claim 23 (previously presented): A process according to claim 20, wherein the coating composition is applied as a single-layer.

Claim 24 (previously presented): A process according to claim 20, wherein the coating composition is applied as a base coat, middle coat, and/or top coat.

Se. No. 09/913,999
Docket No. FA 1022 US NA

Claim 25 (currently amended): A substrate coated with the having a cured coating comprising the curable coating composition according to claim 13 thereon.

Claim 26 (previously presented): The substrate according to claim 25, wherein said substrate is an electrical conductor.